

Name : \_\_\_\_\_

## Expand: Algebraic Identities

Sheet 3

Expand each expression using algebraic identities.

1)  $(1 - 3k)(1 + 3k + 9k^2)$

2)  $\left(m + \frac{n}{m}\right)\left(m^2 - n + \frac{n^2}{m^2}\right)$

3)  $\left(p + \frac{2}{p}\right)\left(p^2 - 4 + \frac{4}{p^2}\right)$

5)  $(5g - 3h)(2g^2 + 3gh + h^2)$

7)  $(8 + xy)(64 - 8xy + x^2y^2)$

9)  $(7r + 6)(49r^2 - 42r + 36)$

10)  $(9 - s^2t^2)(81 + 9s^2t^2 + s^4t^4)$

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**Expand: Algebraic Identities**

Expand each expression using algebraic identities.

1)  $(1 - 3k)(1 + 3k + 9k^2)$

$-27k^3 + 1$

2)  $\left(m + \frac{n}{m}\right)\left(m^2 - n + \frac{n^2}{m^2}\right)$

$m^3 + \frac{n^3}{m^3}$

3)  $\left(p + \frac{2}{p}\right)\left(p^2 + 2 + \frac{4}{p^2}\right)$

$p^3 + \frac{8}{p^3}$

5)  $(5g - 3h)(25g^2 + 15gh + 9h^2)$

$125g^3 - 27h^3$

7)  $(8 + xy)(64 + 8xy + x^2y^2)$

$x^3y^3 + 512$

9)  $(7r + 6)(49r^2 - 42r + 36)$

$343r^3 + 216$

10)  $(9 - s^2t^2)(81 + 9s^2t^2 + s^4t^4)$

$-s^6t^6 + 729$

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